

Application No.: 10/082,318

Docket No.: 20402-00642-US

AMENDMENTS TO THE CLAIMS**LISTING OF CLAIMS**

Claims 1-12 (Cancelled)

13. (Previously Amended) A method of manufacturing a pressure transducer comprising the steps of:

preparing a substrate having a first surface and a second surface opposed to the first surface;

forming a fixed electrode in the first surface of said substrate;

forming a sacrificial layer over said fixed electrode;

forming a diaphragm layer made of an insulating material over said sacrificial layer;

forming a hole which extends from the second surface of said substrate to said sacrificial layer;

injecting gasses into said hole to remove said sacrificial layer in dry etching to form a cavity so that said diaphragm layer is deformed in response to an applied pressure; and

forming at least one waved portion on the first surface of said substrate.

14. (Previously Amended) A method of manufacturing a pressure transducer comprising the steps of:

preparing a substrate having a first surface and a second surface opposed to the first surface;

forming a fixed electrode in the first surface of said substrate;

forming a sacrificial layer over said fixed electrode;

forming a diaphragm layer made of an insulating material over said sacrificial layer;

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forming a hole which extends from the second surface of said substrate to said sacrificial layer;

injecting gasses into said hole to remove said sacrificial layer in dry etching to form a cavity so that said diaphragm layer is deformed in response to an applied pressure; and

forming at least one waved portion on a surface of said sacrificial layer.

15. (Previously Amended) A method as set forth in claim 13 or 14, wherein said substrate is made of a semiconductor substrate having integrated circuit elements which form a detector designed to measure a capacitance between the fixed and moving electrodes.

16. (Previously Amended) A method as set forth in claim 13 or 14, wherein said diaphragm is made of an inorganic material, and said sacrificial layer is made of an organic material.

17. (Previously Amended) A method as set forth in claim 13 or 14, wherein said diaphragm is made from a compound of silicon and one of oxygen and nitrogen.

18. (Previously Amended) A method as set forth in claim 13 or 14, wherein said sacrificial layer is made of polyimide.

19. (Previously Amended) A method as set forth in claim 13 or 14, wherein the removal of said sacrificial layer is achieved in the dry etching using oxygen plasma.

20. (Previously Amended) A method as set forth in claim 13 or 14, wherein said gas injecting step removes said sacrificial layer so as to leave a peripheral portion of said sacrificial layer.

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21. (Original) A method of manufacturing a pressure transducer comprising the steps of:

preparing a substrate having a first surface and a second surface opposed to the first surface;

forming a fixed electrode in the first surface of said substrate;

forming an insulating layer over said fixed electrode;

forming a sacrificial layer on said insulating layer;

forming a diaphragm layer made of a conductive material over said sacrificial layer;

forming a hole which extends from the second surface of said substrate to said sacrificial layer; and

injecting gasses into said hole to remove said sacrificial layer in dry etching to form a cavity so that said diaphragm layer is deformed in response to an applied pressure.

22. (Original) A method as set forth in claim 21, further comprising the step of forming at least one waved portion on the first surface of said substrate.

23. (Original) A method as set forth in claim 21, further comprising the step of forming at least one waved portion on a surface of said sacrificial layer.

24. (Original) A method as set forth in claim 21, wherein said substrate is made of a semiconductor substrate having integrated circuit elements which form a detector designed to measure a capacitance between the fixed and moving electrodes.

25. (Original) A method as set forth in claim 21, wherein said diaphragm is made of an inorganic material, and said sacrificial layer is made of an organic material.

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26. (Previously Amended) A method as set forth in claim 21 wherein said diaphragm is made from a compound of silicon and one of oxygen and nitrogen.
27. (Original) A method as set forth in claim 21, wherein said sacrificial layer is made of polyimide.
28. (Original) A method as set forth in claim 21, wherein the removal of said sacrificial layer is achieved in the dry etching using oxygen plasma.
29. (Original) A method as set forth in claim 21, wherein said gas injecting step removes said sacrificial layer so as to leave a peripheral portion of said sacrificial layer.
30. (Canceled).